

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A peristaltic pump comprising:
occluding surfaces rotatably supported about a common axis by a support;
a first occlusion having a first occlusion surface, wherein one of the support and the first occlusion is movable towards the other of the support and the first occlusion; and
a drive system configured to rotate the occluding surfaces and coupled to said one of the support and the first occlusion so as to move said one of the support and the first occlusion; and
at least one bias mechanism coupled to said one of the support and the first occlusion to resiliently bias said one of the support and the first occlusion towards a non-pumping position while the at least one bias mechanism is out of contact with the first occlusion surface.
2. (Original) The pump of Claim 1, wherein the drive system is coupled to the first occlusion to move the first occlusion surface relative to the occluding surfaces.
3. (Previously Presented) The pump of Claim 2 including a first pivotable arm having a first portion coupled to the drive system and a second portion operably coupled to the occlusion surface.
4. (Original) The pump of Claim 3 including a second pivotable arm having a first portion coupled to the drive system and a second portion operably coupled to the first occlusion.
5. (Canceled)
6. (Previously Presented) The pump of Claim 1, wherein the first occlusion is resiliently biased towards the non-pumping position by the at least one bias mechanism.
7. (Canceled)
8. (Canceled)
9. (Canceled)

10. (Canceled)

11. (Canceled)

12. (Canceled)

13. (Canceled)

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Canceled)

18. (Canceled)

19. (Canceled)

20. (Canceled)

21. (Canceled)

22. (Withdrawn) The pump of Claim 1, wherein the drive system is coupled to the support to move the support relative to the first occlusion.

23. (Withdrawn) The pump of Claim 22 including a platform supporting the drive system and the support, wherein the platform is movably supported relative to the first occlusion and wherein the drive system is operably coupled to the platform so as to move the platform.

24. (Withdrawn) The pump of Claim 23, wherein the drive system includes:
a motor having an output shaft, wherein the motor is movably supported relative to the platform; and

a drive train coupled between the output shaft and the occluding surface, wherein the motor is operably linked to the platform and wherein movement of the motor moves the platform and the support.

25. (Withdrawn) The pump of Claim 24, wherein the motor is resiliently biased towards a pre-selected position.

26. (Withdrawn) The pump of Claim 25, wherein the motor is resiliently biased towards the position such that the occlusion surface is spaced from the occluding surfaces by a distance greater than the diameter of the pumping tube.

27. (Withdrawn) The pump of Claim 24 including a first stop surface configured to limit travel of the motor in a first direction.

28. (Withdrawn) The pump of Claim 27 including a second stop surface configured to limit travel of the motor in a second opposite direction.

29. (Withdrawn) The pump of Claim 24, wherein the drive train includes:
a worm gear; and
a worm in engagement with the worm gear.

30. (Withdrawn) The pump of Claim 24 including a first pivotable arm having a first portion operably linked to the motor and a second portion, wherein movement of the motor in a first direction pivots the second portion into engagement with the platform.

31. (Withdrawn) The pump of Claim 30 including a second pivotable arm having a third portion operably linked to the motor and a fourth portion, wherein movement of the motor in a second opposite direction pivots the fourth portion into engagement with the platform.

32. (Canceled)

33. (Previously Presented) The pump of Claim 1, wherein the drive system is configured to move said one of the support and the first occlusion from a non-pumping position towards a pumping position when the occluding surfaces are rotated about the common axis in a first direction and wherein the drive system is configured to move said one of the support and the first occlusion from the non-pumping position to the pumping position during rotation of the occluding surfaces about the common axis in a second opposite direction.

34. (Canceled)

35. (Previously Presented) A peristaltic pump comprising:
a fluid passage having a compressible portion;
occluding surfaces rotatably supported about a common axis by a support on a first side of the compressible portion of the fluid passage;
an occlusion surface on a second opposite side of the compressible portion of the fluid passage;

a rotary actuator; and

means for operably connecting the rotary actuator to one of the support and the occlusion surface such that the rotary actuator simultaneously rotates the occluding surfaces and moves said one of the support and the occlusion surface towards and away from the other of the support and the occlusion surface between a tube compressing state and a tube uncompressed state; and

means for operably linking the rotary actuator to said one of the occluding surfaces and the occlusion surface such that rotation of the occluding surfaces in a first direction simultaneously moves said one of the support and the occlusion surface towards a tube compressing state and such that rotation of the occluding surfaces in a second opposite direction simultaneously moves said one of the support and the occlusion surface towards the tube compressing state.

36. (Canceled)

37. (Currently Amended) A method for pumping fluid through a tube, the method comprising:

generating a torque;

transmitting the torque to occluding surfaces to rotate the occluding surfaces relative to a support about a common axis;

transmitting the torque to one of the support and an occlusion surface to move at least one of the support and the occlusion surface towards and away from the other of the support and the occlusion surface between a tube compressing state in which the tube is compressed between the occluding surfaces and the occlusion surface and a tube uncompressed state; and

resiliently biasing ~~said~~ said one of the support and the occlusion surface such that the support is spaced from ~~the~~ the occlusion surface by a distance greater than the diameter of the pumping tube.

38. (Previously Presented) The method of claim 37 further comprising converting the torque to a linear force to move said one of the support and the occlusion surface relative to the other of the support and the occlusion surface between the tube compressing state in which the tube is compressed between the occluding surfaces and the occlusion surface and the tube uncompressed state.

39. (Previously Presented) A peristaltic pump comprising:

occluding surfaces;

an occlusion facing the occluding surfaces; and

a drive system configured to rotate the occluding surfaces in a first direction so as to move one of the occluding surfaces and the occlusion from a non-pumping position towards a pumping position and configured to rotate the occluding surfaces in a second opposite direction so as to move said one of the occluding surfaces and the occlusion from the non-pumping position towards the pumping position.

40. (Canceled)

41. (Previously Presented) an apparatus comprising:

a peristaltic pump comprising:

occluding surfaces rotatably supported about a common axis by a support;

a first occlusion having a first occlusion surface, wherein the first occlusion is movable towards the support; and

a drive system configured to rotate the occluding surfaces and coupled to the first occlusion so as to move the first occlusion relative to the occluding surfaces, wherein the drive system includes:

a motor having an output shaft, wherein the motor is movably supported; and

a drive train coupled between the output shaft and the occluding surfaces, wherein the motor is operably linked to the first occlusion and wherein movement of the motor moves the first occlusion relative to the occluding surfaces.

42. (Previously Presented) The apparatus of Claim 41, wherein the motor is linearly movable.

43. (Previously Presented) The apparatus of Claim 41, wherein the motor pivots.

44. (Previously Presented) The apparatus of Claim 41, wherein the motor is resiliently biased towards a pre-selected position.

45. (Previously Presented) The apparatus of Claim 44 further comprising a pumping tube, wherein the motor is resiliently biased towards the position such that the first occlusion surface is spaced from the occluding surfaces by a distance greater than the diameter of the pumping tube.

46. (Previously Presented) The apparatus of Claim 41 including at least one bias mechanism coupled to the motor to resiliently bias the motor towards a preselected position.

47. (Previously Presented) The apparatus of Claim 41 including a first stop surface configured to limit travel of the motor in a first direction.

48. (Previously Presented) The apparatus of Claim 47 including a second stop surface configured to limit travel of the motor in a second opposite direction.

49. (Previously Presented) The apparatus of Claim 41, wherein the drive train includes:

a worm gear; and

a worm in engagement with the worm gear.

50. (Previously Presented) The apparatus of Claim 41, wherein the drive train includes:

a first spur gear; and

a second spur gear in engagement with the first spur gear, wherein the pump further includes a linkage pivotably supporting the motor relative to the first spur gear.

51. (Previously Presented) The apparatus of Claim 41 including a first pivotable arm having a first portion operably linked to the motor and a second portion, wherein movement of the motor in a first direction pivots the second portion into engagement with the first occlusion.

52. (Previously Presented) The apparatus of Claim 51 including a second pivotable arm having a third portion operably linked to the motor and a fourth portion, wherein movement of the motor in a second opposite direction pivots the fourth portion into engagement with the first occlusion.

53. (Previously Presented) The apparatus of Claim 41, wherein the motor is stationarily coupled to the first occlusion such that the motor and the first occlusion move together.

54. (Previously Presented) The apparatus of Claim 53 including a second occlusion having a second occlusion surface, wherein the second occlusion is stationarily coupled to the motor such that the motor and the second occlusion move together.

55. (Previously Presented) The apparatus of Claim 54, wherein the first occlusion surface and the second occlusion surface face one another.

56. (Previously Presented) The apparatus of Claim 41 further comprising:
an ink reservoir;
an ink dispensing device configured to dispense ink upon a medium; and
a pumping tube in fluid communication with the ink reservoir and the ink dispensing device and positioned between the occluding surfaces and the occlusion.

57. (Previously Presented) The apparatus of claim 41 further comprising at least one bias mechanism coupled to said one of the support and the first occlusion to resiliently bias said one of the support and the first occlusion towards a non-pumping position.

58. (Previously Presented) A peristaltic pump comprising:
occluding surfaces rotatably supported about a first common axis by a support;
a first occlusion having a first occlusion surface, wherein the first occlusion is movable towards the support;
a drive system configured to rotate the occluding surfaces and coupled to the occlusion so as to move the occlusion relative to the occluding surfaces;
a first pivotable arm pivotable about a second axis and having a first portion coupled to the drive system and a second portion operably coupled to the occlusion surface; and
a second pivotable arm pivotable about a third axis and having a first portion coupled to the drive system and a second portion operably coupled to the first occlusion.

59. (Previously Presented) The pump of claim 1 further comprising at least one tube between the occluding surfaces and the first occlusion surface.